FIG. 1

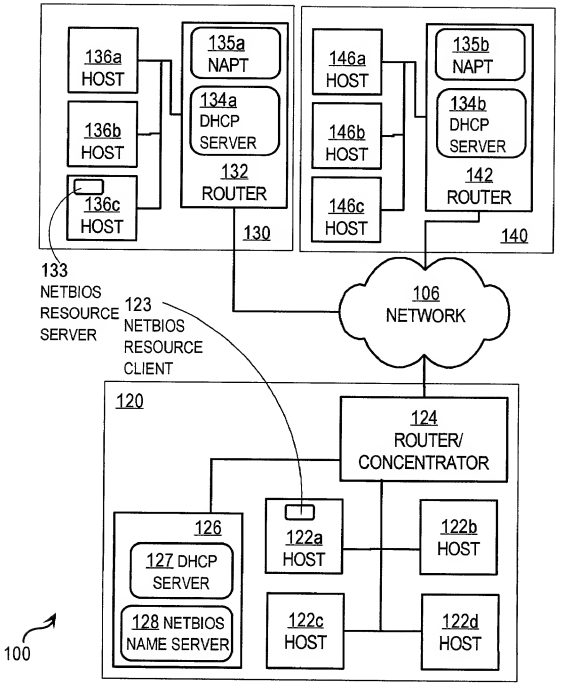

136a HOST
136b HOST
136c HOST
135a NAPT
134a DHCP SERVER
132 ROUTER
130
146a HOST
146b HOST
146c HOST
135b NAPT
134b DHCP SERVER
142 ROUTER
140
133 NETBIOS RESOURCE SERVER
123 NETBIOS RESOURCE CLIENT
106 NETWORK
120
124 ROUTER/ CONCENTRATOR
126
127 DHCP SERVER
128 NETBIOS NAME SERVER
122a HOST
122b HOST
122c HOST
122d HOST
100

FIG. 2

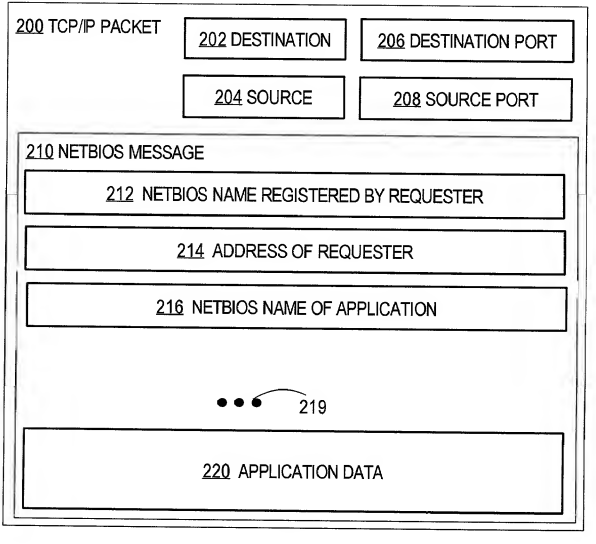

200 TCP/IP PACKET
202 DESTINATION
206 DESTINATION PORT
204 SOURCE
208 SOURCE PORT
210 NETBIOS MESSAGE
212 NETBIOS NAME REGISTERED BY REQUESTER
214 ADDRESS OF REQUESTER
216 NETBIOS NAME OF APPLICATION
219
220 APPLICATION DATA

FIG. 3

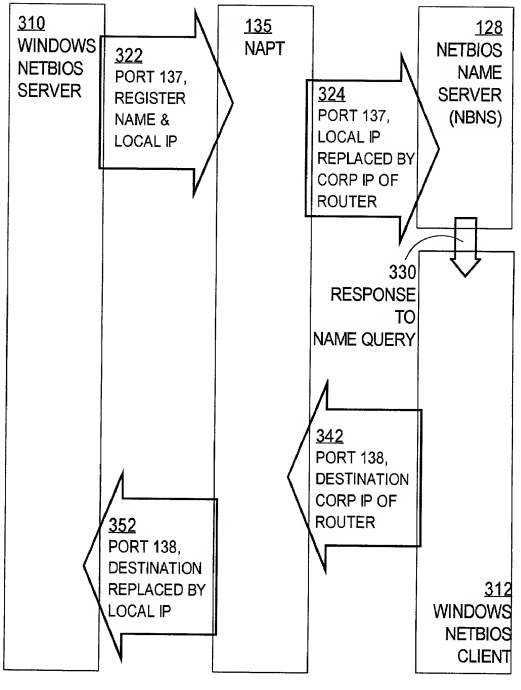

310
WINDOWS
NETBIOS
SERVER
322
PORT 137,
REGISTER
NAME &
LOCAL IP
135
NAPT
324
PORT 137,
LOCAL IP
REPLACED BY
CORP IP OF
ROUTER
128
NETBIOS
NAME
SERVER
(NBNS)
330
RESPONSE
TO
NAME QUERY
342
PORT 138,
DESTINATION
CORP IP OF
ROUTER
352
PORT 138,
DESTINATION
REPLACED BY
LOCAL IP
312
WINDOWS
NETBIOS
CLIENT

FIG. 4

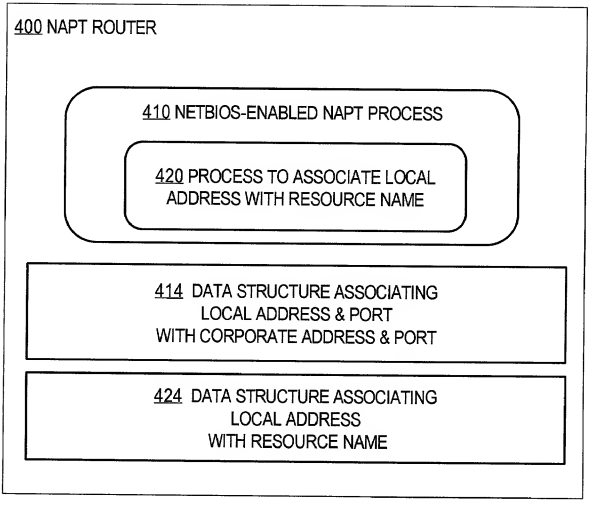

400 NAPT ROUTER
410 NETBIOS-ENABLED NAPT PROCESS
420 PROCESS TO ASSOCIATE LOCAL ADDRESS WITH RESOURCE NAME
414 DATA STRUCTURE ASSOCIATING LOCAL ADDRESS & PORT WITH CORPORATE ADDRESS & PORT
424 DATA STRUCTURE ASSOCIATING LOCAL ADDRESS WITH RESOURCE NAME

FIG. 5A

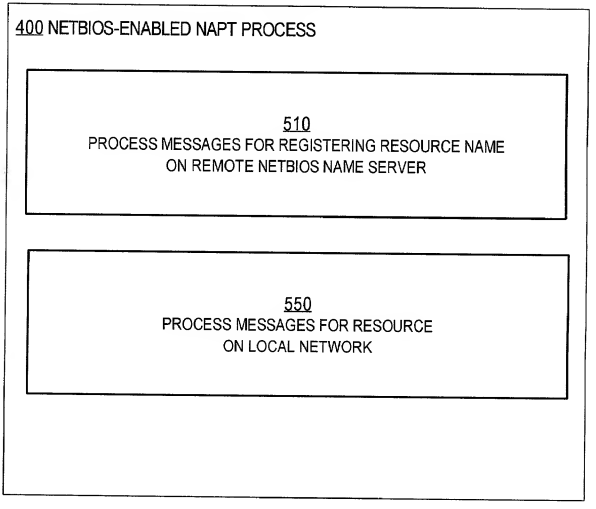

400 NETBIOS-ENABLED NAPT PROCESS
510
PROCESS MESSAGES FOR REGISTERING RESOURCE NAME
ON REMOTE NETBIOS NAME SERVER
550
PROCESS MESSAGES FOR RESOURCE
ON LOCAL NETWORK

FIG. 5B

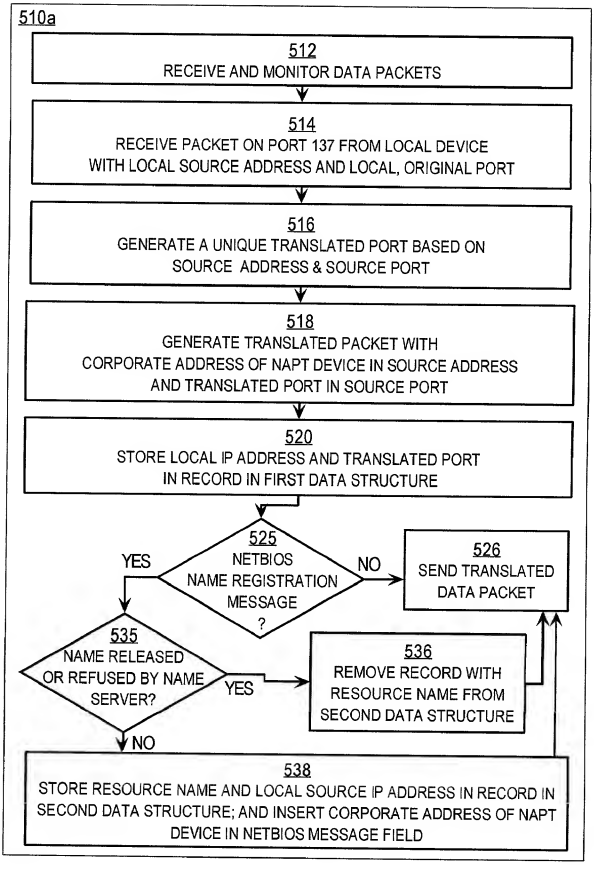
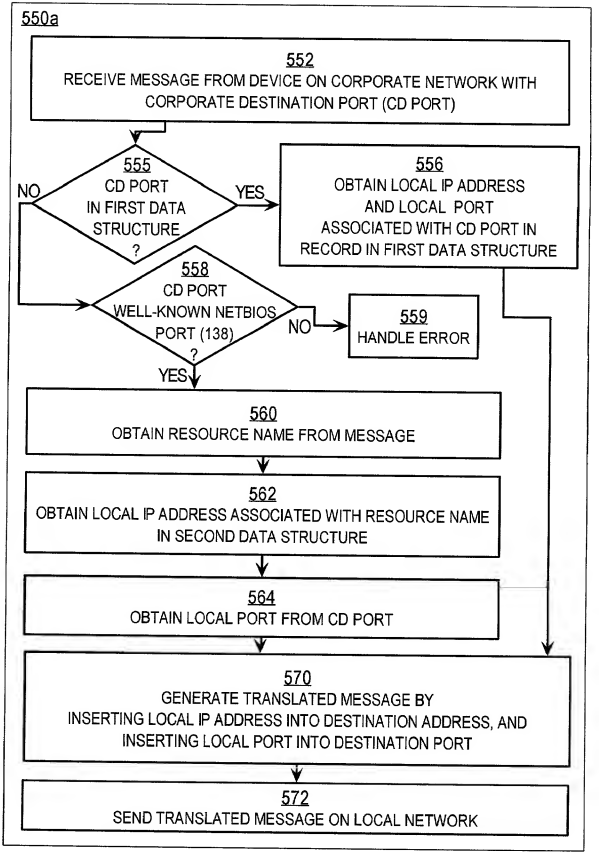

510a
512
RECEIVE AND MONITOR DATA PACKETS
514
RECEIVE PACKET ON PORT 137 FROM LOCAL DEVICE WITH LOCAL SOURCE ADDRESS AND LOCAL, ORIGINAL PORT
516
GENERATE A UNIQUE TRANSLATED PORT BASED ON SOURCE ADDRESS & SOURCE PORT
518
GENERATE TRANSLATED PACKET WITH CORPORATE ADDRESS OF NAPT DEVICE IN SOURCE ADDRESS AND TRANSLATED PORT IN SOURCE PORT
520
STORE LOCAL IP ADDRESS AND TRANSLATED PORT IN RECORD IN FIRST DATA STRUCTURE
525
NETBIOS NAME REGISTRATION MESSAGE ?
YES
NO
526
SEND TRANSLATED DATA PACKET
535
NAME RELEASED OR REFUSED BY NAME SERVER?
YES
536
REMOVE RECORD WITH RESOURCE NAME FROM SECOND DATA STRUCTURE
NO
538
STORE RESOURCE NAME AND LOCAL SOURCE IP ADDRESS IN RECORD IN SECOND DATA STRUCTURE; AND INSERT CORPORATE ADDRESS OF NAPT DEVICE IN NETBIOS MESSAGE FIELD

FIG. 5C



10260-2282160

TD6280'82824660

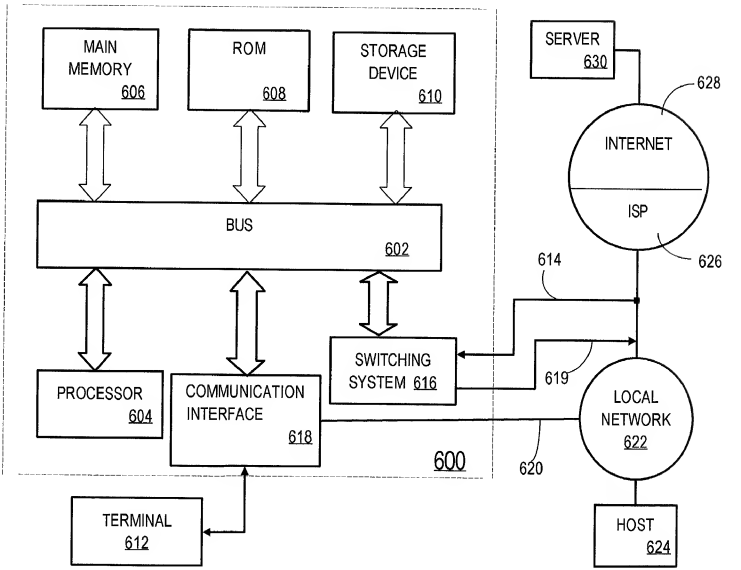



FIG. 6